

## Muskmelons and Watermelons

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Many persons want to raise good muskmelons and watermelons. Both, and especially muskmelons, are among the most difficult crops to grow successfully in New York. Although the total acreage of melons is not large, they account for an important part of many farm incomes. If soil and weather conditions are favorable and you control diseases and insects, there is every reason to expect that you can increase sales of locally grown fruits provided you market *only high-quality melons*.

## CLIMATE

Muskmelons and watermelons thrive in warm weather. Both require a long growing season because even the very earliest varieties take from 80 to 90 days to reach maturity. Later maturing varieties require as many as 110 to 120 days. Northern-most regions of the State and areas of high altitude are, therefore, generally less suitable from the standpoint of climate. Selection of proper varieties, use of frost protectors, and "early" soil, however, tend to overcome the disadvantage of a short growing season. Muskmelons are more affected by climate than are watermelons and are likely to be of inferior quality in cool cloudy seasons.

## SOIL

Both muskmelons and watermelons need well-drained soil; neither crop can tolerate "wet feet." Sandy soils are generally preferred because usually they are the best drained soils of the area. In a highly competitive market where earliness is rewarded by profit, a well-drained, light soil with a southern exposure is an asset. Later melon varieties may be planted on slightly heavier loam but it must also be well drained.

## LIME

Test all land to be planted to muskmelons for lime requirement, because muskmelons will not tolerate acid soils. Soil with a pH of 6.0 to 6.8 is preferable, that is, one that is just slightly acid. On soils that are too acid, the leaves are likely to turn yellow and to curl or show some dying at the edges. This "acid-yellows" is more likely to appear during dry seasons than during seasons with ample rainfall. To add lime once the yellowing has become apparent is usually too late.

Watermelons are more tolerant of acid soils and usually grow better at a pH below that recommended for

muskmelons. Your county agent will be glad to test your soil for lime requirement.

## VARIETIES

### Muskmelons

The short growing season in New York limits the number of varieties you can grow profitably. Until recently, Delicious and Benders Surprise made up at least 75 per cent of the melon acreage in the State. In 1943, Iroquois, a fusarium-wilt-resistant melon of the Bender type, was released and has steadily climbed in popularity. Of high quality and similar to each other are Queen of Colorado, Pride of Wisconsin, and Market King, but they yield less and tend to crack at the blossom end in wet seasons. Schoons Hard Shell is much like these three but larger.

*Delicious* (Early Bender) matures in 80 to 85 days. An early variety. Fruit nearly round; medium large, weighing 4 to 5 pounds; shallow netting and slightly prominent ribs. Skin pale creamy yellow; flesh orange, medium thick. Quality good.

*Delicious 51*. Similar to regular Delicious but resistant to fusarium wilt.

*Bender's Surprise*. Matures in 90 days. Midseason variety. Fruit very short oval; very large, weighing from 6 to 8 pounds; coarse, deep netting with prominent ribs. Skin grayish green, turning cream color at maturity. Flesh orange, thick, and slightly coarse in texture. Quality good.

*Seneca Bender*. Matures in 90 days. Similar to Bender's Surprise but smaller and more uniform. Weighs from 5 to 6 pounds. Quality good.

*Iroquois*. Matures in 90 days. Most popular for main crop in New York. Similar in size to Seneca Bender but resistant to fusarium wilt. Fruit round to oval; medium large, weighing from 5 to 6 pounds; coarse, deep netting with prominent ribs. Flesh orange, thick, and slightly coarse in texture. Quality good.

*Pride of Wisconsin* (Queen of Colorado, Market King). Matures in 90 to 95 days. Late melon of superior quality but subject to cracking at blossom end during rainy seasons. Fruit oval; small to medium in size, weighing from 4 to 5 pounds; sparse, coarse netting, with slightly prominent ribs. Flesh deep orange, thick. Quality excellent.

*Other varieties: Schoons Hard Shell*—similar to Pride of Wisconsin but much larger. *Golden Delight*—early, larger, Pride of Wisconsin type. Fruit elongated. Quality excellent. *Hearts of Gold*—small fruit, highly flavored melon better suited for the southern part of the State.

### Watermelon

Most of the watermelon varieties grown in the Southern States and shipped North will not mature in New York. Tom Watson, Stone Mountain, and Cannonball, for example, require too long a growing season to be commercially profitable or satisfactory in the home garden. The varieties listed

below are a few that are most likely to mature in New York.

*Honey Cream.* Matures in 80 to 85 days. Yellow fleshed variety increasing in popularity for home gardens and roadside stands. Fruit round; medium size, weighing from 8 to 10 pounds. Light green with darker green stripes. Flesh bright yellow and crisp; thin rind. Quality excellent.

*Dixie Queen.* Matures in 85 to 90 days. Fruit round; medium large, weighing from 25 to 30 pounds. Light green with dark green stripes (body color is lighter than Honey Cream). Flesh light red, with medium thin rind. Quality good.

*New Hampshire Midget.* Matures

in 80 to 85 days. Small-fruited icebox variety for home gardens and roadside stands. Fruit oval; very small, weighing from 3 to 5 pounds; mottled light green color. Flesh medium red, with very thin rind. Appears "seedier" than most varieties. Quality fair to good.

*Rhode Island Red* resulted from a cross of Honey Cream and Dixie Queen. It has the earliness and size of Honey Cream with high quality red flesh.

*Seedless Watermelons.* Matures in 85 to 90 days. Usually small to medium size; round. Seed coats present but edible. Difficult to germinate and must be planted alongside regular varieties. Seed expensive. Quality good.

*Iroquois* is a good-quality deeply ribbed melon, with coarse heavy netting



## MANURE AND FERTILIZER

High-quality melons can be grown only on healthy plants supplied with enough plant nutrients either from manure or commercial fertilizer.

If manure is available at a reasonable cost, broadcast it at the rate of from 15 to 20 tons per acre in the spring before plowing. Since melons have a high requirement for potash and since manure is low in phosphorus, drill in a supplemental application of 400 to 500 pounds of an 8-16-16 fertilizer before planting.

If you have only a limited supply of manure and plenty of labor, you may deposit a fork or shovelful under each hill. The manure should be well-rotted and thoroughly mixed with the soil to prevent caking and to prevent restriction of the root growth of the melon plant in a dry season.

In most sections of the State, manure is not available at a reasonable cost and you must depend on commercial fertilizer. The amount to be used depends on many things of which the type of soil and past fertilizer practices are most important.

### **Soils adequately limed and fertilized heavily for the past several years**

#### *Sandy Soils*

From 500 to 700 pounds of 10-10-10 (broadcast after plowing)

#### *Loam Soils*

From 500 to 700 pounds of 10-10-10 (broadcast one-half of this *before* plowing and the other half *after* plowing)

If you plan a nitrogen sidedressing later in the season, use a fertilizer with a 1-2-2 ratio, such as 5-10-10, at planting time instead of the 1-1-1.

### **Soils adequately limed but not fertilized heavily in the past several years**

#### *Sandy Soils*

From 600 to 900 pounds of 8-16-16 (broadcast after plowing)

#### *Loam Soils*

From 600 to 900 pounds of 8-16-8 (broadcast one-half of this *before* plowing and the other half *after* plowing)

High-analysis fertilizers have been suggested because they are most economical. Although higher priced per ton they are usually cheaper per unit of plant nutrient. If the grades recommended are not available, use substitute grades to supply an equivalent amount of plant nutrients. For example 800 pounds of 6-12-6 could be substituted for 600 pounds of 8-16-8, or 1000 pounds of 5-10-10 for 600 pounds of an 8-16-16.

## GROWING PLANTS

Melons in New York are usually grown from plants started in greenhouses, hotbeds, or coldframes. Sow the seed in plant bands, pots, or other containers from 3 to 4 weeks before field planting. Sow from three to four seeds in each container, and remove all but the strongest two plants before field-planting time. Do not transplant melon plants to the field until most of the danger of frost is past and the soil

has become warm. In the lower Hudson Valley and Long Island this will be around May 15; in upstate New York nearer June 1.

#### Planting in the field

You may also seed melons directly in the field. Best spacing depends on the variety grown, the equipment used for cultivation, pest control, and the vine growth normally expected. Most growers plant muskmelons in 6-foot rows, with plants from 3 to 5 feet apart in the row. When they are planted in drill rows, drill the seed at the rate of 2 or 3 pounds per acre. Transplants are commonly set 2 plants per hill. Watermelons, which produce considerably larger vines, are often planted in 8-foot rows with plants 4 feet apart in the row. Time of seeding varies but should not be until the

soil is warm and danger of frost is past.

Do not hesitate to plant melons near other vine crops. Muskmelons and watermelons will not cross with each other nor with cucumbers, squash, or pumpkins. If your melons "taste like cucumbers", it's probably because of poor vine growth or cold weather. Watermelons will cross with citron, but the effect will not show up unless seed saved from the citron-pollinated watermelons is planted. These fruits are likely to have a poor flavor.

#### Plant protectors

Melon plants are sensitive to cold weather. Plant protectors over transplants or field-seeded melons often result in earlier yields because they protect the plants from cold winds and

*Paper plant protectors shield young melon plants from cold spring winds and provide a warmer greenhouse-like atmosphere*





provide a warm greenhouse-like atmosphere. You may purchase paper or plastic "hottents" or "hotcaps" or you may make protectors. Place these over the seeds or plants at field planting.

After the seedlings have developed one or two true leaves, slit the caps on the lee side for ventilation. Enlarge the slit and remove the caps gradually as the season progresses. If you remove the caps too soon, the tender plants may be injured if cool winds follow.

#### Care of melons in the field

Avoid deep cultivation; the melon root system is near the soil surface. Cultivate 1 inch or less in depth and disturb the vines as little as possible.

Irrigation is economical on many light soils. No rules can be given concerning when to irrigate or how much water to apply. Maintaining a uniform soil moisture content by irrigation often decreases fruit cracking of such muskmelon varieties as Pride of Wisconsin. Irrigated melons are likely to mature later than unirrigated ones.

The first blossoms on muskmelon plants are male and, therefore, cannot be expected to set fruits. Combination male-female flowers are produced later. These are the only ones which set fruit. Insects are instrumental in pollinating melon blossoms. The presence of bees has often increased the set of fruit.

#### HARVESTING

Certain changes take place in most muskmelons as the fruits reach ma-

turity. The netting, which is usually flattened on young melons, becomes fully rounded. The body color (under the netting) turns to a yellow or yellowish green. The stem separates readily from the fruit, leaving a clean stem scar, called *full-slip* stage. Most good pickers reach for the yellow-bodied fruit; if it parts readily from the vine, they put it in the basket. Western-grown melons are often picked green or in the *half-slip* stage so they can withstand bruising. This accounts for their poor quality. There is no reason to pick local melons other than at full-slip—at the peak of quality.

There is no rule of thumb to determine the proper time to pick watermelons. What applies to one variety may not be true of another. One indication of maturity is the color of the rind. The background color of the rind on the part of the melon in contact with the ground changes from white to pale yellow when the fruit is ripe.

The sound emitted when the fruit is thumped is another way to determine ripeness. Most varieties give a metallic ringing sound when they are green and a muffled or dead sound as they become mature. The knack of knowing when to pick watermelons comes only after long experience.

Watermelons should be *cut* not pulled from the vine.

Melons picked from dead or dying vines are not sweet even though they may have a fairly satisfactory outward appearance. Do not market these melons. Melon growing is a profitable



business only as long as high-quality fruits are put up for sale.

### DISEASES

The more serious diseases of melons are damping-off, bacterial wilt, anthracnose, scab or pox, mosaic, Fusarium wilt, downy mildew, Alternaria leaf blight, powdery mildew, and wound- or blossom-end rot. The six most important control measures are:

1. Rotations with other than vine crops.

2. Destruction of mosaic-carrying weed hosts, such as bur cucumber, catnip, motherwort, pokeberry, ground cherry, plantain, flowering spurge, and white cockle.

3. Keeping plantings away from such flowers as petunia, gladiolus, phlox, hollyhock, and from such crops as tobacco, soybean, and old alfalfa fields.

4. Treatment of the seed with corrosive sublimate, and then just before planting, dusting with an appropriate chemical dust.

5. Spraying or dusting both in the seedbed and in the field.

6. Planting Fusarium-resistant varieties.

Seed treatment consists of dipping the seed for 5 minutes in corrosive sublimate (bichloride), 1 tablet in each pint of water, or 1 ounce of the powder in  $7\frac{1}{2}$  gallons of water. First dissolve the powder in hot water, then dilute to  $7\frac{1}{2}$  gallons with cool water. Do not have the temperature below 65° F. nor above 85° F. Tie the seed

in cheesecloth or thin bags, and dip for 5 minutes, then rinse the seed carefully and let it dry. Many seed companies sell seed that already is treated. Just before planting, dust the seed lightly with Dow 9B, Orthocide 406, Arason, Spergon, or Semesan. One or more of these materials can be bought locally in any part of the State.

The plants are susceptible to lime injury; therefore, never apply spray or dust that contains lime. It is better to use a cucumber-melon dust which usually can be bought in various sized bags and which consists of:

Ziram or Orthocide 406	10 pounds
Powdered cube root (5 per cent rotenone)	20 pounds
Flour	10 pounds
Talc	60 pounds

Apply the dust as soon as the plants break through the ground if planted in the field. Make a second application four days later, then once a week as long as the plants require protection. If beetles are no longer a problem, you may use the dust without rotenone. Some commercial growers dust or spray throughout the entire picking season.

If you wish to use a spray, you may apply 2 pounds of Ziram (includes Zerlate, Opalate, and many other commercial names) or Orthocide 406, in each 100 gallons of water (1 ounce in 3 gallons) with rotenone and a sticker-spreader. The pressure should not be much greater than 250 pounds.

If seedlings are grown in the greenhouse or coldframes, spray them week-

ly with either Ziram or Orthocide 406, but without rotenone or a sticker-spreader.

Rarely is downy mildew present. Neither Ziram nor Orthocide 406 is effective against this fungus. As soon as it is reported in the State, the fungicide should be changed to copper-talc dust or 4 pounds of one of the copper-oxychlorides in 100 gallons of water (2 ounces in 3 gallons) with a sticker-spreader such as Orthol-K. If powdery mildew, which appears like talc sprinkled on the upper surface of the leaf becomes destructive, mix 25 pounds of finely divided dusting sulfur with 75 pounds of the above copper-talc dust, and make one or two weekly applications while the weather is warm and sunny. A new material, Iscothan or Karathane, is especially effective against powdery mildew. One ounce of the material is mixed in each 25 gallons of water and applied as a spray as soon as the mildew begins to show, and a second application is made a week later. Do not apply when the plants are wet or just before a rain.

Iroquois, a Bender type, and Delicious 51 are two muskmelons resistant to Fusarium wilt and adapted to New York State conditions. These should be grown wherever Fusarium wilt has occurred.

Eradicate all mosaic-carrying weeds around the greenhouses and coldframes where you grow melon plants. If only a small area is involved, dig these out by hand. Where this is impractical, use a combination of 2,4-D

and 2,4,5-T commonly referred to as *brushkiller*. Because it is harmful to most plants and may persist for as long as a month or two, spray only after all the plants have been removed from the structures. Late winter or spring spraying is not advisable around greenhouses or coldframes. Follow a similar weed eradication program on roadways or hedgerows adjacent to melon fields.

### INSECTS

Several kinds of insects usually need to be controlled on melons. This can be done by the regular application of dusts or sprays to the growing vines. These insecticides include rotenone, chlordane, and parathion. Chlordane and parathion are somewhat dangerous to use and you should follow the label instructions closely.

*Seed corn maggots* may attack sprouting seed set in soil that is rich in humus and when the soil is still somewhat cool. If this insect has been a problem, incorporate 1 teaspoonful of a 5 per cent chlordane dust in the hill in which you are to plant the seeds.

The *striped cucumber beetle* is nearly always a pest of melon vines. It chews on the leaves of very young plants. A second brood of the beetles may scar maturing melons as they feed upon them. This insect also transmits diseases from one plant to another.

A 1 per cent rotenone dust or a 1 per cent parathion dust kills the beetles. The rotenone is safer to use,

but it has no lasting effect and it gives a slower kill. The parathion is somewhat more effective and gives quick kills. It must be used with great care since it is toxic to human beings. You may buy either dust already mixed with the proper fungicide. At times it may be desirable to use the insecticide and fungicide separately.

You may need to make treatments weekly or oftener when the infestation continues severe. The parathion may injure slightly the leaves of young

plants, but the injury is usually outgrown.

*Aphids* or *plant lice* occasionally appear on the lower surface of the leaves. Their feeding reduces the vitality of the plants as they suck the sap from the leaves. A 1 per cent dust of parathion controls aphids. Suitable sprays are 1 pint of 25 per cent parathion emulsion or  $\frac{1}{2}$  pint of 40 per cent TEPP applied per acre in about 100 gallons of water. Make the treatments whenever aphids appear.

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